



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-------------------------|------------------------|
| 09/997,995 | 11/30/2001 | Giovanni Frezza | 856063.722 | 3898 |
| 500 7590 01/10/2008 SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 5400 SEATTLE, WA 98104 | | | EXAMINER NADAV, ORI | |
| | | | ART UNIT 2811 | PAPER NUMBER |
| | | | MAIL DATE 01/10/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/997,995
Filing Date: November 30, 2001
Appellant(s): FREZZA, GIOVANNI

MAILED

JAN 10 2003

GROUP 2800

Robert Iannucci
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 9, 2007 appealing from the Office action mailed May 7, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| | | |
|-----------|-----------------|--------|
| 5105262 | Grider | 4-1992 |
| 5,948,991 | Nomura et al. | 9-1999 |
| 4,894,707 | Yamawaki et al. | 1-1990 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

1. Claims 33, 40 and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for a device comprising all the structural limitations of dependent claim 31, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33.

There is no support for a device comprising all the structural limitations of dependent claims 22 and 29, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claims 40 and 42.

2. Claims 33, 40 and 42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no support for a device comprising all the structural limitations of dependent claim 31, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33.

There is no support for a device comprising all the structural limitations of dependent claims 22 and 29, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claims 40 and 42.

3. Claims 19, 21-22, 24, 27-29, 31-33, 36 and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grider in view of Nomura et al.

Regarding claims 19, 22, 27, 29 and 31, Grider teaches in figures 7 and related text a packaged electronic device ready for electronic use, comprising:

a semiconductor integrated electronic circuit 11 including an image sensor 32;

a protective package 12, 13 surrounding and supporting the electronic circuit, the protective package having a window over the electronic device such that the electronic device can be at least partially activated from outside of the protective package; and

a projecting portion of material (part of material 13 which is located directly above the electronic device) projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the electronic device to be activated through the projecting portion when the electronic device is in use,

wherein said projecting portion is surrounded by dyke or barrier formed on a surface of the electronic circuit.

Grider does not explicitly state that the protective package is a plastic protective package.

Nomura et al. teach in figure 6 and related text a plastic protective package 122.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plastic protective package in Grider's device in order to reduce the cost of the making the device, to improve productivity and to provide better protection to the chip.

Regarding claims 24, 32, 36, 41 and 43 prior art's device teaches a protective package also contacts the top of the electronic circuit adjacent to the window, and wherein the electronic circuit includes a proximity sensor.

Regarding claims 21, 28, 33, 40 and 42, since the projecting portion of elastic material projecting from a surface of the electronic device into the window of prior art's device is arbitrarily chosen as part of material 13 which is located directly above the electronic device, then prior art teaches window is defined by tapering walls that taper inwardly toward the electronic circuit.

Regarding claims 19, 27 and 31, Grider further teaches in figures 7 and related text a projecting portion of material projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the electronic device to be activated through the projecting portion when the electronic device is in use, wherein said projecting portion is shaped to form a ring on the electronic circuit.

4. Claims 19, 21-22, 24, 27-29, 31-33, 36 and 40-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki et al. in view of Nomura et al.

Regarding claims 22, 29 and 31, Yamawaki et al. in figure 5g and related text a packaged electronic device ready for electronic use, comprising:

- a semiconductor integrated electronic circuit including an image sensor;

- a plastic protective package 9 surrounding and supporting the electronic circuit, the protective package having a window over the electronic device 1 such that the electronic device can be at least partially activated from outside of the protective package; and

a projecting portion of elastic material (part of material 9 which is located in direct contact with ring 3) projecting from a surface of the electronic device into the window, the projecting portion being structured to enable the electronic device to be activated through the projecting portion when the electronic device is in use, wherein

said projecting portion on the electronic circuit is surrounded by ring shaped dyke or barrier 3 formed on the electronic circuit.

Yamawaki et al. do not explicitly state that the protective package is a plastic protective package.

Nomura et al. teach in figure 6 and related text a plastic protective package 122.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plastic protective package in Yamawaki et al.'s device in order to reduce the cost of the making the device, to improve productivity and to provide better protection to the chip.

Regarding claims 21, 24, 28, 32, 33, 36 and 40-43, prior art's device teaches a protective package also contacts the top of the electronic circuit adjacent to the window, wherein the window is defined by tapering walls that taper inwardly toward the electronic circuit, and wherein the electronic circuit includes a proximity sensor.

Regarding claims 19 and 27, Yamawaki et al. in figure 5g and related text a substantially the entire claimed structure, as applied above, except a pressure sensor chip.

Nomura et al. teach in figure 6 and related text a pressure sensor 130 chip.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a pressure sensor chip in Yamawaki et al.'s device in order to use the device in an application which requires a pressure sensor chip.

(10) Response to Argument

1. Appellant argues on pages 7-8 that there is support for a device comprising all the structural limitations of dependent claim 31, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33, because all the claimed limitations are described in the specification, beginning at page 5, line 24.

Appellant further argues that *"the embodiments of Figures 4-8, which all include windows defined by tapering walls that taper inwardly toward an electronic circuit. For example, Figure 4 shows a protective package 9 with window 70 having tapering walls. The specification, at page 6, lines 1-2, states: "Where the lug 13 is shaped as a truncated cone, the window 70 will show with tapering walls toward the sensor 30"."*

Appellant also states that *"In particular, col. 6, lines 16-18 states, "Advantageously, a dyke, e.g., ring-shaped, is formed on the top surface of the sensor 30. The covering layer 50 is then deposited inside this barrier provided by the dyke, the projecting portion 51 so formed being surrounded by the dyke indeed." The covering layer 50 is also described as a protective layer at page 4, lines 18-19".*

The specification contains plurality of distinct and separate inventions, described in each of the embodiments of figures 2 through 8, respectively. New claims 33, 40 and 42 describe a structure, which was not disclosed in the original specifications. Appellant tries to build a new device, which was not described in the original specification, by combining elements from the separate devices disclosed in the embodiments of figure 2-8.

The examiner agrees with appellant's statement on page 6 in the section "summary of claimed subject matter", that claim 31 reads on the embodiment of figure 2B. Clearly, there is no support in the device of figure 2B for a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in dependent claim 33.

Regarding appellant's arguments that there is support in the device of figure 2B for a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33, it is noted that:

The statement *"the embodiments of Figures 4-8, which all include windows defined by tapering walls that taper inwardly toward an electronic circuit"* is not correct, because the device of figure 2B clearly does not include windows defined by tapering walls that taper inwardly toward an electronic circuit.

The statement *"Figure 4 shows a protective package"*, imports limitations from the embodiment of figure 4.

The statement *"In particular, col. 6, lines 16-18 states"*, imports limitations from the embodiment of figure 5, and

The statement *"The covering layer 50 is also described as a protective layer at page 4, lines 18-19"* imports limitations from the embodiment of figure 2B.

The lack of written description with respect to claims 40 and 42 is also apparent in view of the above discussion.

2. Appellant argues on page 9 that there is an enabling support in the disclosure for a device comprising all the structural limitations of dependent claim 31, and a window being defined by tapering walls that taper inwardly toward the electronic circuit, as recited in claim 33.

The examiner agrees with appellant's statement on page 6 in the section "summary of claimed subject matter", that claim 31 reads on the embodiment of figure 2B. Although the disclosure states that a window being defined by tapering walls that taper inwardly toward the electronic circuit can be formed in the devices of figures 4-8, an artisan would not know how to make the device of figure 2B with a window being defined by tapering walls that taper inwardly toward the electronic circuit. The location of dyke 52 in the device of figure 2B prevents an artisan from knowing how to modify the structure so as to include a window being defined by tapering walls that taper inwardly toward the electronic circuit of the device. Furthermore, there is no explicit teaching in the specification how to modify the structure of figure 2B in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The lack of written description with respect to claims 40 and 42 is also apparent in view of the above discussion.

3. Appellant argues on pages 10 and 12 that Grider does not teach the top housing 13 is elastic, and *"In fact, Grider teaches away from using an elastic material for the top housing by stating that the housing means provides a pressure barrier (see claims 1-2)"*.

The examiner agrees that Grider does not explicitly state that the top housing 13 is elastic. Nomura was cited to teach an artisan that a protective package can be a plastic protective package. Furthermore, it is unclear why using an elastic material for the top housing of Grider's device would not provide a pressure barrier. The elastic protective material of Nomura, which is used in Grider's device, is cured and solidified (Nomura, page 8, lines 33-34), and thereby provides solid plastic protective, pressure barrier, package.

4. Appellant argues on pages 10 and 12 that *"the top housing 13 does not project from a surface of the electronic device 32. Instead, as shown in Figures 7-8, the top housing 13 defines a cavity 40 directly above the entire device, and thus, no portion of the top housing 13 projects from the surface of the electronic device 32"*.

Element 32 is not the "electronic device", as identified by appellant. Element 32 is the pressure sensor. There is no requirement in claim 19 for the top housing 13 to project from a surface of the pressure sensor.

Claim 19 recites "*a packaged electronic device ready for electronic use, comprising: a semiconductor integrated electronic circuit including an image sensor*", and "*a projecting portion projecting from a surface of the electronic device*". Grider teaches "a packaged electronic device (the entire device of Grider) ready for electronic use, comprising: a semiconductor integrated electronic circuit 11 including an image sensor 32". Since the entire device of Grider is the "packaged electronic device", then said projecting portion 13 projects from a surface of the electronic device.

5. Appellant argues on pages 11 and 12 that Nomura does not teach a ring shaped projecting portion that projecting from a surface of the electronic device.

Nomura was not cited to teach an artisan a ring shaped projecting portion that projecting from a surface of the electronic device. Nomura was cited to teach an artisan a protective package can be a plastic protective package.

6. Appellant argues on pages 11 and 12 that there is no motivation for combining Grider and Nomura in any way that would create the claimed invention, because replacing Grider's top housing 13 with Nomura's housing 122 would not result in a

device which includes any ring-shaped, elastic projecting portion projecting from a surface of the electronic device.

Grider teaches in figure 7 a device which includes a ring-shaped (see top view of the ring-shaped 13 in figure 9), projecting portion (the projecting portion in figure 7) projecting from a surface of the electronic device. It is unclear why forming the top housing 13 of Grider from elastic material would change Grider's device in such a way as to not include a ring-shaped, projecting portion projecting from a surface of the electronic device.

7. Appellant argues on pages 11 and 12 that "the Examiner has not provided any support for his assertion that one would be motivated to employ Nomura's plastic housing "to reduce the cost of making the device, to improve productivity, and to provide better protection to the chip." Nomura does not state that his plastic housing 122 provides any of those advantages".

It is well known in the art that it is cheaper to produce resin molded package than a package comprises materials such as ceramic, for example. Cheaper production reduces the cost of the device. Plastic molding is also easier to produce, and this improves the productivity of the device. Furthermore, plastic resin packaging provides electrical insulation for the device and protection from contamination. Note further that according to the KSR decision, simple substitution of one known element for another to

obtain predictable results, and use of known technique to improve similar devices in the same way, is not patentable.

8. Appellant argues on pages 13-15 that, regarding claims 19 and 27, there is no motivation for combining Yamawaki and Nomura, because "there is no motivation to add the pressure sensitive chip 130 of Nomura to a ring shape like the wall 3 of Yamawaki".

Appellant further argues that: First, *"the Yamawaki device includes a rigid glass window pane 12 that would prevent proper operation of the device if the optical device 1 of Yamawaki were replaced with the pressure-sensitive chip 130 of Nomura"*. Second, *"Nothing in the prior art suggests the desirability of replacing the Yamawaki optical chip 1 with the Nomura pressure-sensitive chip 130. The Examiner does not explain why, if faced with an application that requires a pressure sensor chip, one would not simply use the entire Nomura pressure sensor device rather than trying to modify the Yamawaki optical device to become a pressure sensor"*. Third, the Examiner's proposed change to the Yamawaki device would improperly render the Yamawaki device unsatisfactory for its intended purpose", as an optical device.

Regarding appellant's argument that the rigid glass 12 in Yamawaki's device would prevent proper operation of the device if the optical device 1 of Yamawaki were replaced with the pressure-sensitive chip 130 of Nomura, it is obvious to an artisan that if a pressure sensor is used in Yamawaki's device instead of the optical sensor, a rigid

glass pane 12 will not be used, and the structure will be built according to the embodiment depicted in figure 2f of Yamawaki.

Regarding appellant's argument that an artisan would be motivated to "simply use the entire Nomura pressure sensor device rather than trying to modify the Yamawaki optical device to become a pressure sensor", an artisan would be motivated to modify Yamawaki's optical device into a pressure sensor in order to use the device in an application which cannot support the tall protruding structure of Nomura.

Regarding appellant's argument that the Examiner's proposed change to the Yamawaki device would improperly render the Yamawaki device unsatisfactory for its intended purpose as an optical device, it is obvious that when using Yamawaki's device with a pressure sensor, the intended purpose will be a pressure device and not an optical device.

8. Appellant argues on pages 15-16 that, regarding claims 22, 29 and 31, Yamawaki and Nomura do not teach or suggest the invention recited in claim 22, because claim 22 recites that the device includes a dyke or barrier that surrounds an elastic projection portion and is formed on a surface of an electronic circuit, and *"the examiner asserts that the wall 3 of Yamawaki is such a dyke or barrier, the elastic material 132 of Nomura is a projecting portion, and the combination of them would create the invention. The motivation provided by the Examiner is that the elastic material 132 would provide better protection for the chip"*.

The examiner did not assert that *"the wall 3 of Yamawaki is such a dyke or barrier, the elastic material 132 of Nomura is a projecting portion, and the combination of them would create the invention"*. The examiner stated that Yamawaki teaches the dyke or barrier and the projecting portion, wherein Nomura is merely cited to teach an artisan that the protective package can be a plastic protective package.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

O.N.

Conferees:

Darren Schuberg



Lynne Gurley



Ori Nadav

